Periscope.

a.—PHYSIOLOGY OF THE NERVOUS SYSTEM.

THE OLIVARY BODIES.—Bechterew has made experiments upon these bodies. It has long been known that deep injuries to the medulla oblongata, especially in its posterior part, caused forced rotation of the animal on its long axis ; the same characteristic being seen after section of the cerebellar peduncle. He tried to determine in what part of the medulla the fibres going to the cerebellum arose, and whose section was followed by movements of rotation. His experiments were made upon dogs, as they have a larger space to operate on than is the case with rabbits. Only when he made sections at the level of the olivary bodies, were deep injuries of the medulla oblongata followed by movements of rotation. In deep lesions of the medulla oblongata in the neighborhood of the calamus calling out movements of rotation, it was found that a part of the corresponding olivary body was injured. On narcotized animals the muscles of the back part of the neck were divided, and the occipito-atloid membrane laid bare. Through a small opening in this membrane a small knife was introduced, and the olivary body alone was injured, without any lesion of the neighboring cerebellar peduncle or other parts of the medulla oblongata. When the olivary body has sustained a considerable lesion, then the results are completely analogous to those seen after injury of the posterior cerebellar peduncle. Immediately after the operation there is a marked twisting of the head and trunk on the long axis of the body, so that the side of the cheek corresponding to the lesion is turned downward and the opposite cheek upward. On the injured side the ball of the eye is turned downward and outward, the other upward and inward. Nystagmus is present in both eyes. The body rotates toward the side of lesion, and this movement takes place in paroxysms. No motor or sensory defects were present. When both olivary bodies are considerably injured, the animal staggers, there is shaking of the head and trunk with nystagmus. Not seldom the animal loses the power to go or stand, without the presence of a paralysis. All these tottering movements were most marked during the first day after the operation; later they became weaker and weaker; and in case of a limited lesion of the olivary body, the animal recovers nearly completely. These facts lead him to the conclusion that the olivary bodies constitute an organ which stands in near relation to the cerebellum and its functions, just as the semicircular canals and the gray matter of the third ventricle does. Looking at the olivary bodies as united on the one side with the posterior columns of the spinal cord, and on the other side with the cerebellum, he puts forth the hypothesis that they are an organ in which peripheral tactile sensations are reflected and conducted to the central organ of equilibrium, the cerebellum. With this view we have three organs of equilibrium in connection with the cerebellum: the semicircular canals, which are also connected with the organ of hearing; the gray substance of the third ventricle, which stands in relation to the organ of sight and the movements of the globe of the eye; and, finally, the olivary gray matter, which is probably connected with the organs of tactile sensibility.—*Pflüger's Archiv*, Band xxix, Heft. 5 and 6.

PHYSIOLOGICAL OPTICS.—M. W. Le Conte Stevens has made some experiments in physiological optics, using, partly, the light of the electric spark. They show that in the new mode of stereoscopy the play of the eyes is by no means necessary, although it constitutes an important aid in all cases where a clear visual judgment is not attainable at the first glance. They show, also, very conclusively, that the conscious perception of double images in the binocular field of view, on which so much stress is laid by Sir David Brewster, tends rather to interfere with it. His idea is to discard intuition entirely, and, with Helmholtz, to regard the degree of attention bestowed on objects pictured at the same moment on different parts of the two retinas as an element of more import than either play of eye or the perception of double images.—*London Philosophical Magazine*, October, 1882.

EFFECTS OF METALLIC EXCITATION UPON THE MOVEMENTS OF CILIATED EPITHELIUM.—Bœcci, after giving a short history of the experiments upon ciliated epithelium, describes an instrument, consisting of a table, corks, and a lever, which inscribes the movement communicated to it by the epithelium. For the excitation, he used thin polished discs of the metals. The œsophagi of frogs were used in the experiments. The metals were divided, according to their effects upon the movement of the cilia, into exciting, inhibitory, and indifferent. The indifferent metals were iron, tin, and lead; the exciting metals are copper, gold, and silver; whilst the inhibitory are zinc, cadmium, and bismuth.—*Rivista clinica di Bologna*, Sett. e Otto., 1882.

THE NUMBER OF NERVE-FIBRES AND MOTOR GANGLION CELLS IN THE SPINAL CORD OF THE FROG.—E. H. Birge has made some